PROCESS FOR ENHANCING THE EXISTING AMBIENCE, IMAGING, DEPTH, CLARITY AND SPACIOUSNESS OF SOUND RECORDINGS

Abstract: Taking maximum advantage of the Madsen effect and means of extending the fusion zone; incoming mono or stereo audio is processed by the following equations, where the delay for any repetition is within the fusion zone for attenuations K.

Stereo result (1, 2):

1) Ch. A = source ch. A, add (ch. B source delayed by Haas delay D_1, attenuated by attn. K_1), subtract (ch. A source delayed by D_2, attn. by K_2), subtract (ch. B source delayed by D_3, attn. by K_3), add (ch. A source delayed by D_4, attn. by K_4)....

2) Ch. B = source channel B, subtract (ch. A source delayed by Haas delay D_5, attn. by K_5), subtract (ch. B source delayed by D_6, attn. by K_6), add (ch. A source delayed by D_7, attn. by K_7), add (ch. B source delayed by D_8, attn. by K_8)....

Extracting front channel ambience to the surrounds (3, 4):

3) Surround Ch. A = invert (ch. B source delayed by Haas delay D_9, attn. by K_9), add (ch. A source delayed by D_{10}, attn. by K_{10}), add (ch. B source delayed by D_{11}, attn. by K_{11})....

4) Surround Ch. B = (ch. A source delayed by Haas delay D_{12}, attn. by K_{12}), add (ch. B source delayed by D_{13}, attn. by K_{13}), subtract (ch. A source delayed by D_{14}, attn. by K_{14})....

Alternatively: Some or all of the subtracted (inverted) terms may be added. Some terms after the first summation may be eliminated. For equations 3, 4, an A minus B matrix may be used instead of the direct channel sources.